

COMET TRC-20SA



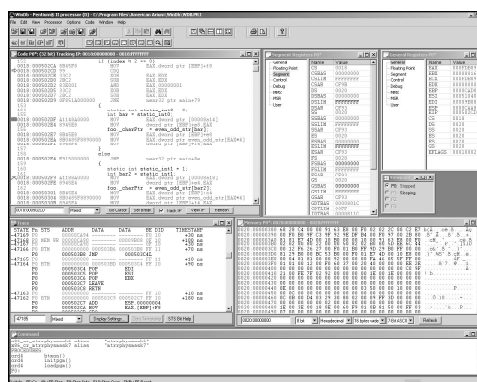
Full-Featured In-Circuit Emulator (ICE) For Intel® Pentium® III Processors

Welcome to American Arium's state-of-the-art family of COMET in-circuit emulators. COMET products offer exceptional visibility to your target operation. Our TRC-20SA ICE provides real-time run control and superb event and trigger manipulation, including accurate breakpoint capabilities on both the processor *and* the frontside bus, giving you a robust tool for pinpointing and eliminating low-level software hangs. In addition to including all the features you would expect to find in any professional debugging tool, American Arium's COMET products incorporate state-of-the-art technology designed to minimize debug time, helping you complete your project on schedule and within budget.

The TRC-20SA is a full-featured in-circuit emulator designed to debug BIOS, device drivers, OS kernels, and embedded applications with frontside bus cycles of 100 MHz and 133 MHz.

Primary among the TRC-20SA's features is trace capability, giving you the ability to review execution history in order to analyze past events. It employs American Arium's state-per-transfer data capture technology that aligns processor cycles for reliable bus cycle type, address, *and* data breakpoint functionality. You can even break on deferred cycles! In addition, the emulator offers all the features of our in-target probes (ITPs), eliminating the need for multiple solutions to different software problems.

The WinDbg debugger interface is an American Arium core technology specifically designed for high-end Intel Architecture (IA) design and debug. The 32-bit application runs on Microsoft® Windows® 95/98/NT/2000.



WinDbg Interface

WinDb is used with all American Arium probes and emulators. Because American Arium designed and developed the software specifically for the equipment, the tight integration of the hardware and software gives you the most reliable product on the market today. Easy to install and use, the software has IA-32- and IA-64-specific features that cannot be found in any other debugger. You can step through mode changes, set breakpoints in out-of-context address space, and view fly-over addresses as never before.

American Arium has forged a synergistic relationship with Intel Corporation, creating strong working ties with the chip maker. With privileged access to early silicon, our debugging tools support most Intel processors, including the Pentium III processor. And Intel is not only a supplier but a customer, using our emulators to debug their systems. Such a relationship helps ensure the reliability and compatibility of all of our products.

TRC-20SA Features

- Works in real time
 - All processor frequencies
- Breakpoints
 - 4 debug register
 - 64 software
 - 6 hardware events
 - 4 sequence levels
 - 1 counter
 - SMM entry/exit
 - Reset
 - BNC external trigger in/out
 - Deferred cycles supported
 - 16 external probes (optional)
- Source code/symbolic debug
 - Boot-loadable OMF-386, ELF/DWARF2, Intel Textsym
- Multi-processing (SMP) support
- Real-time trace
 - 100/133 MHz bus acquisition
 - 256K x 207 bits
 - 31-bit, 10 ns timestamp
 - 16 external probes (optional)
 - Disassembly with cache enabled
 - SMP threads recorded (color coded)
 - Integrated symbols
 - Linked C source code
 - Event filtering
 - Save to disk
- Registers
 - 386
 - System
 - Control
 - Debug
 - MSRs
 - Floating point
 - MMX™ technology
 - XMM (SSE)
- Address translation
 - Real
 - Virtual-86
 - BigReal
 - Protected
 - System Management Mode
- Robust command language
- Download formats
 - BIN, OMF-386, ELF, DOS EXE, Intel Hex
- Dynamic page translation
- Self-diagnostic test suite
- TCP/IP interface
- 1 year free comprehensive warranty

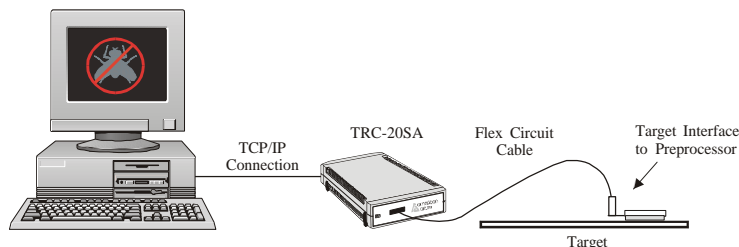
COMET TRC-20SA

Pentium® III processors can be emulated via a JTAG In-Target Probe (ITP) tool (ECM-20PE) as well as a TRC-20SA.

The primary differences between the ECM-20PE and the TRC-20SA are:

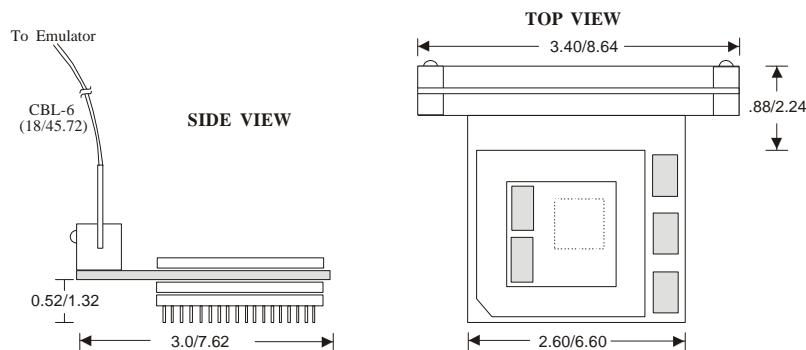
1. **Processor bus trace** - The ECM-20PE is a run control tool only. In the TRC-20SA, the processor trace is used to view a history of executed code. Filters can be used to view specific events that are important while debugging.
2. **Bus breakpoints** - Since the TRC-20SA monitors the frontside bus, you can set breakpoints on hardware bus events. Complex sequences can be used to stop the processor. I/O and memory read and write triggers can be specified with data values!
3. **Interconnect** - The ECM-20PE connects via a Test Access Port (TAP). The TRC-20SA plugs directly into the processor socket.

TRC-20SA BLOCK DIAGRAM



PREPROCESSOR MECHANICAL SPECIFICATIONS

Scale: in/cm



PC Host Requirements

- PC host (Pentium processor or higher)
- Windows 95/98/NT/2000
- SVGA monitor (800x600 or higher)
- 20 Mbytes hard disk space
- 16 Mbytes RAM

Ordering Information

TRC-20SA	Intel Pentium III processor full-featured in-circuit emulator. Includes Comet frontside bus trace emulator, interface hardware, power supply, cables, WinDb software, manual, and one year STAR-1 service agreement.
PRB-16	16-channel external probe
STAR-1	Annual five point service agreement

Specifications

Environmental:	32-90°F (0-31°C), max 85% humidity
Electrical:	100-120 V or 220-226 V, 50-60 Hz
Probe Loading:	5 pf +1.3 inches of trace ~60 Ohm impedance ~180 psec/inch
Communications:	TCP/IP
Dimensions (in/cm):	(H)2.25/5.7 (W)11/27.9 (L)9.6/24.4

The Company

American Arium has been the primary market supplier of Pentium processor ITPs and ICEs since 1992. The company introduced Intel Pentium Pro and Pentium II processor development tools in 1995 and 1996, respectively. In 1998, American Arium introduced tool support for the Pentium II Xeon™ processor. The company currently supports Intel Celeron™, Pentium III, Pentium III Xeon, and Itanium™ processors. The company's mission is to provide timely, superior technical products with an unmatched commitment to service.

Note: Equipment specifications and performance characteristics may change without notice.

